Tracking update
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Recent tracking work

Tracking evaluator (SvtxEval) efficiency improvements by Christof (PR 333)

- Decreased running time by factor of ~ 5! Report today.

Fixed bug in PHG4SvtxClusterizer::ClusterMapsLadderCells (PR 332)

- The bug sometimes produced clusters from hits in different staves, modules, or chips in high multiplicity events - producing nonsense cluster positions for both tracks in that MVTX layer - following slides.

The tracking presently uses a lot of memory (sometimes exceeds 20 GB in central Hijing events)

- Haiwang is trying to profile the memory use, report today.

Sourav has been looking into use of a fixed TPC cell threshold in the TPC clustering

- Report today.

Sookhyun is working on improved track seeding

- Report today.

Effect of MVTX clustering bug fix

This bug had a significant effect on track efficiency in high multiplicity events.

The new tracking efficiency is shown on the next slide. The events were:

A hijing event (0-4 fm impact parameter)

- Thrown at Z = 0

and

100 pions with

- Flat p_T distribution from 0.1 to 50.0 GeV/c
- $-1.0 < \eta < 1.0$
- Inherits Z vertex from Hijing event

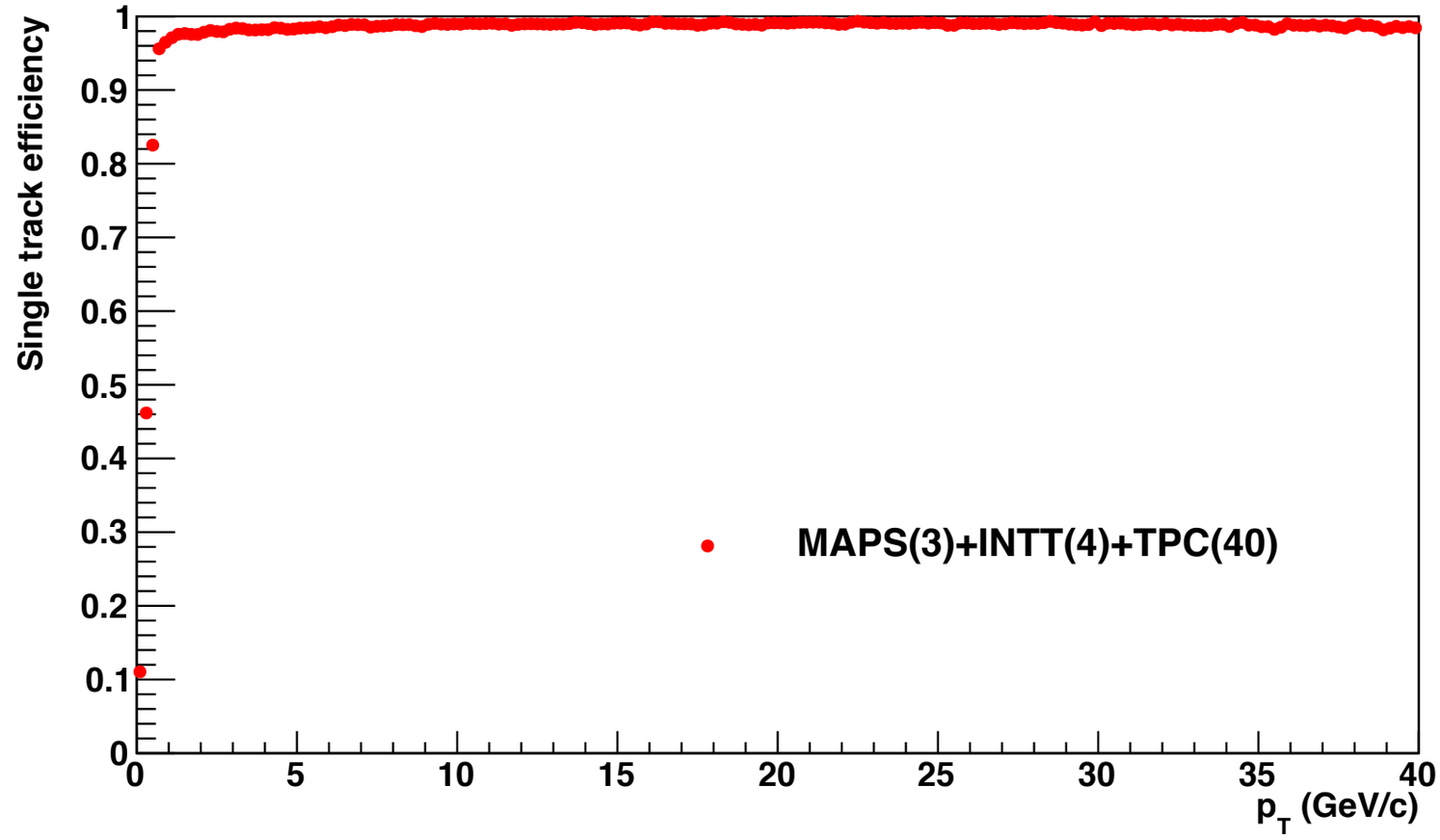
and

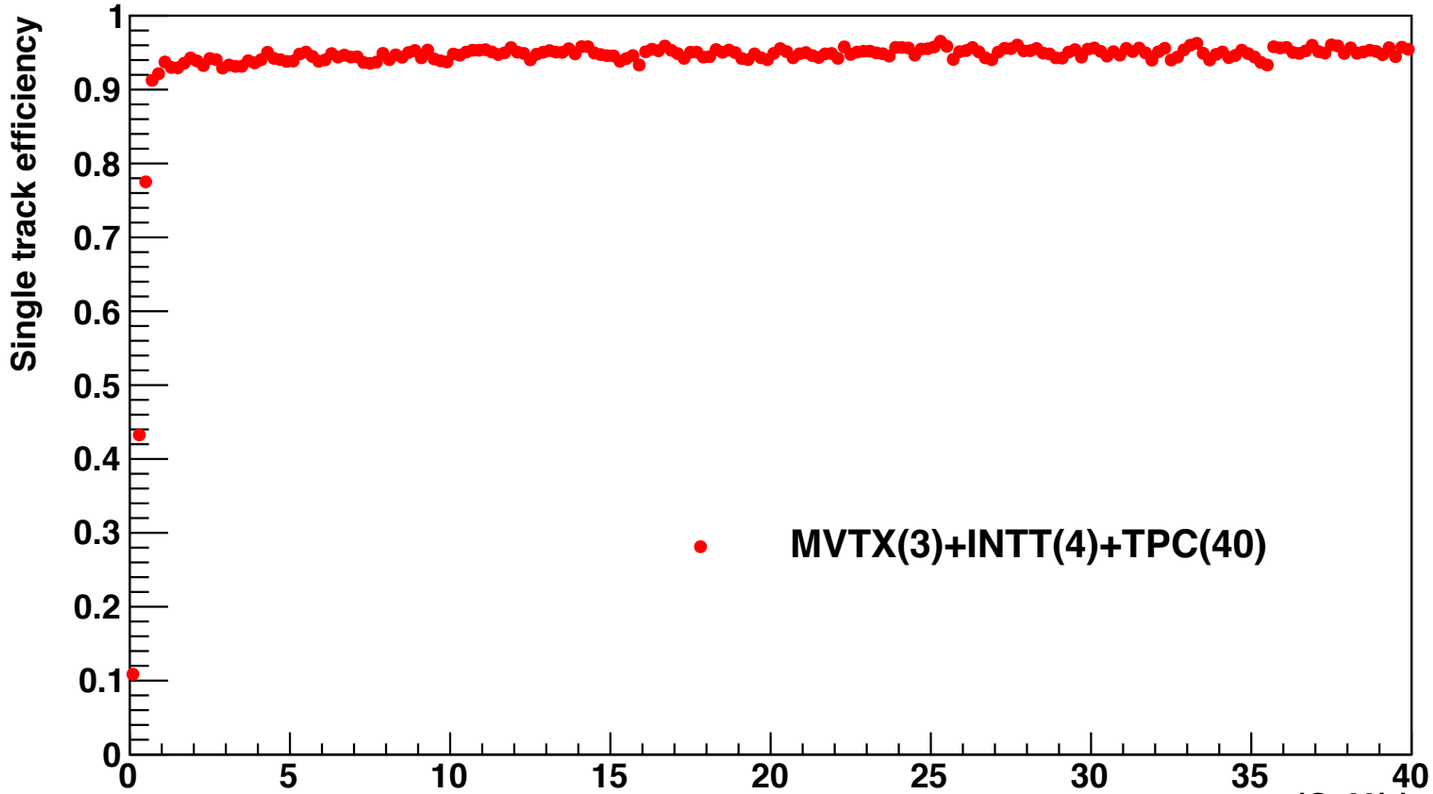
1 Y(1S) with

- Realistic p_T distribution
- $-1.0 < y < 1.0$
- Inherits Z vertex from Hijing event

Tracking efficiency

100 pion events

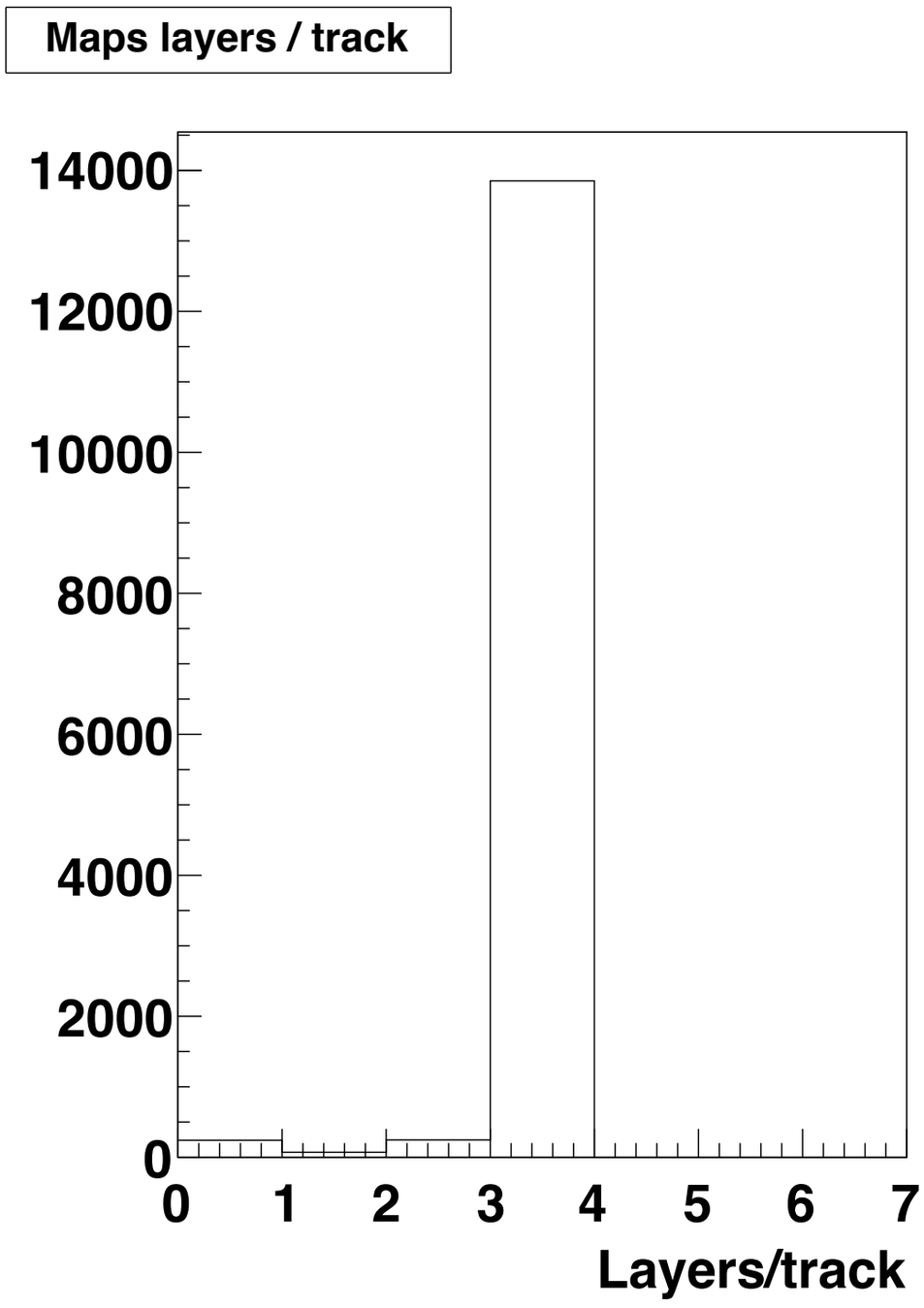


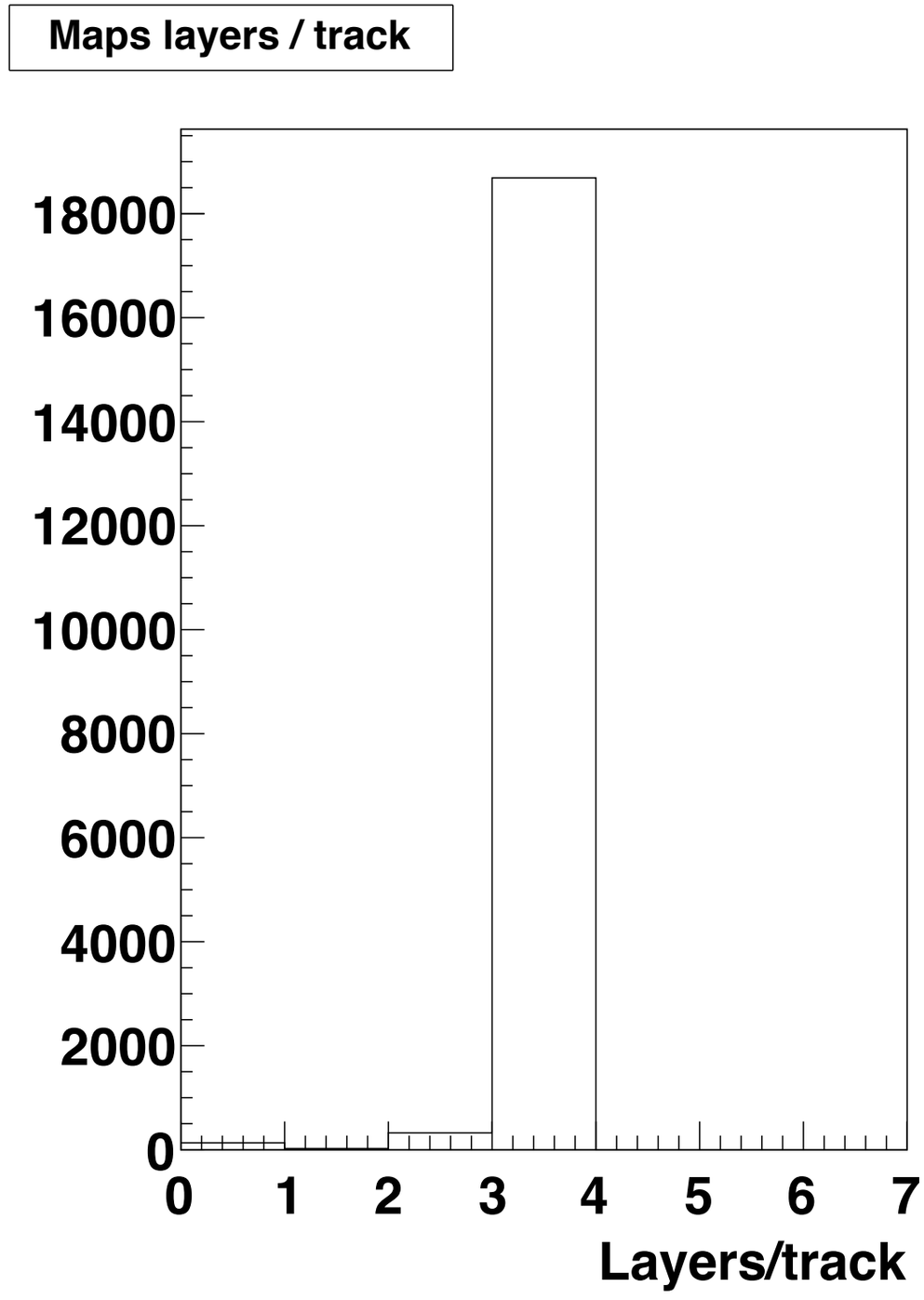


Central Hijing
+ 100 pions

MVTX layers per reconstructed track

100 pion events





Central Hijing + 100 pions